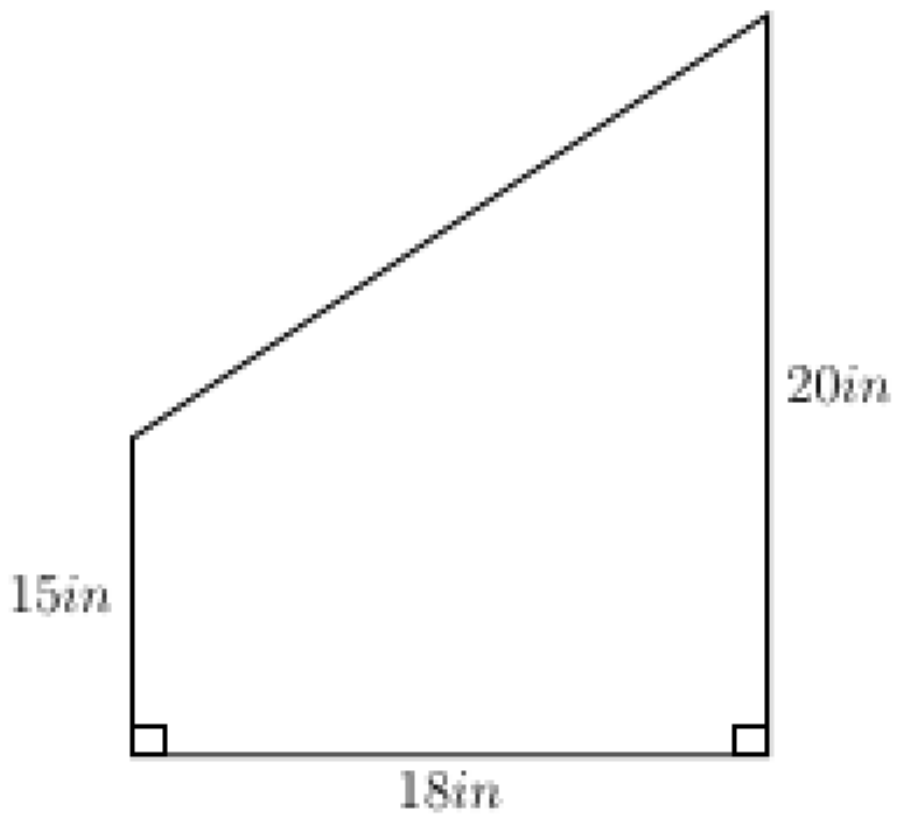
**Topic**: Area of a trapezoid

**Question**: What is the area of the trapezoid shown?




**Answer choices**:

A $315\ \text{in}^2$

B $360\ \text{in}^2$

C $424\ \text{in}^2$

D $630\ \text{in}^2$

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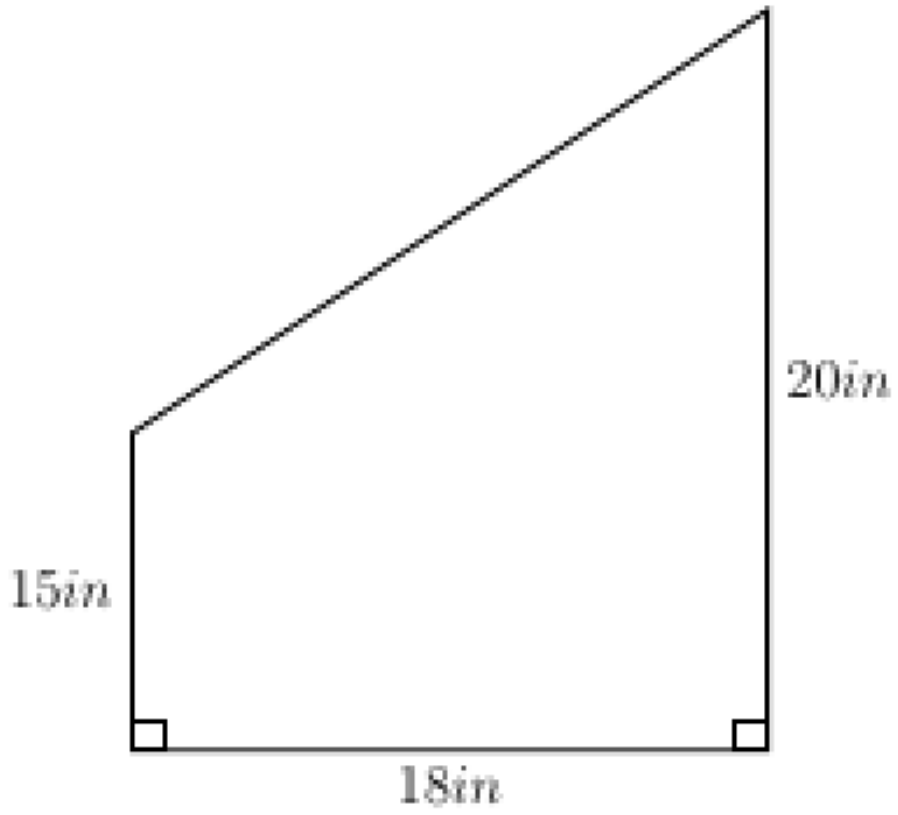
**Solution**: A

Even though the two parallel sides are vertical in this figure,




they are still the bases (because they are parallel). You can mentally rotate the figure $90°$ if that helps.

So the bases are $15$ in and $20$ in.

Likewise, even though the $18$ in side is on the bottom, it's still considered the height. So the height is $18$ in.

$$\text{area} = \frac{1}{2} \cdot (18 \text{ in})(15 \text{ in} + 20 \text{ in}) = 315 \text{ in}^2$$

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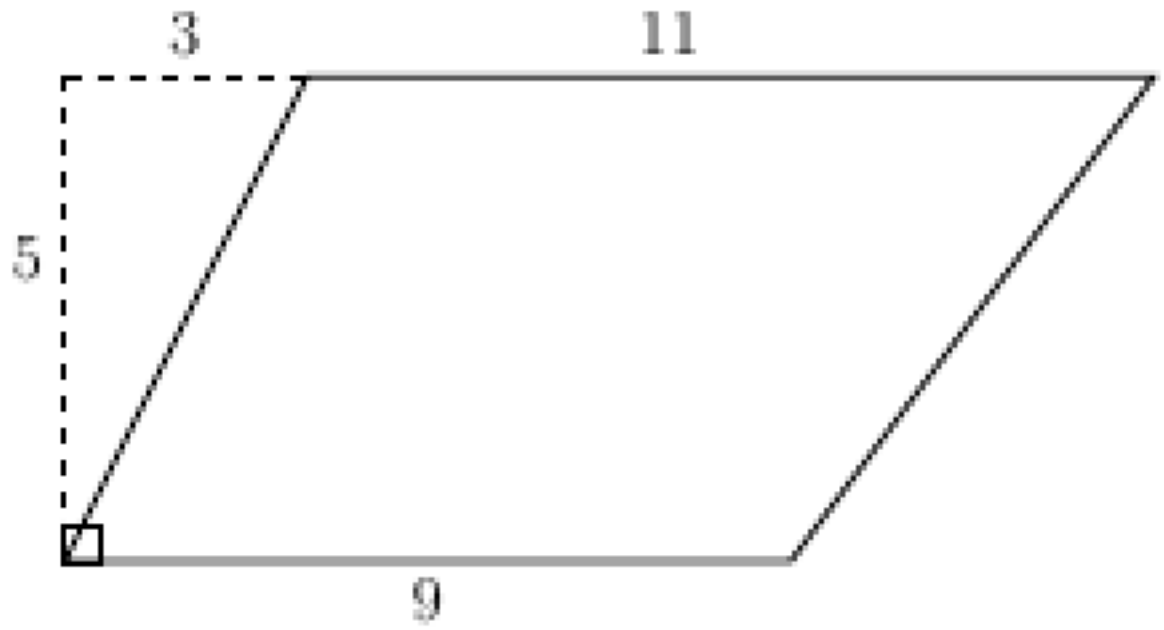


**Answer choices**:

A $30$ square units

B $45$ square units

C $50$ square units

D $55$ square units

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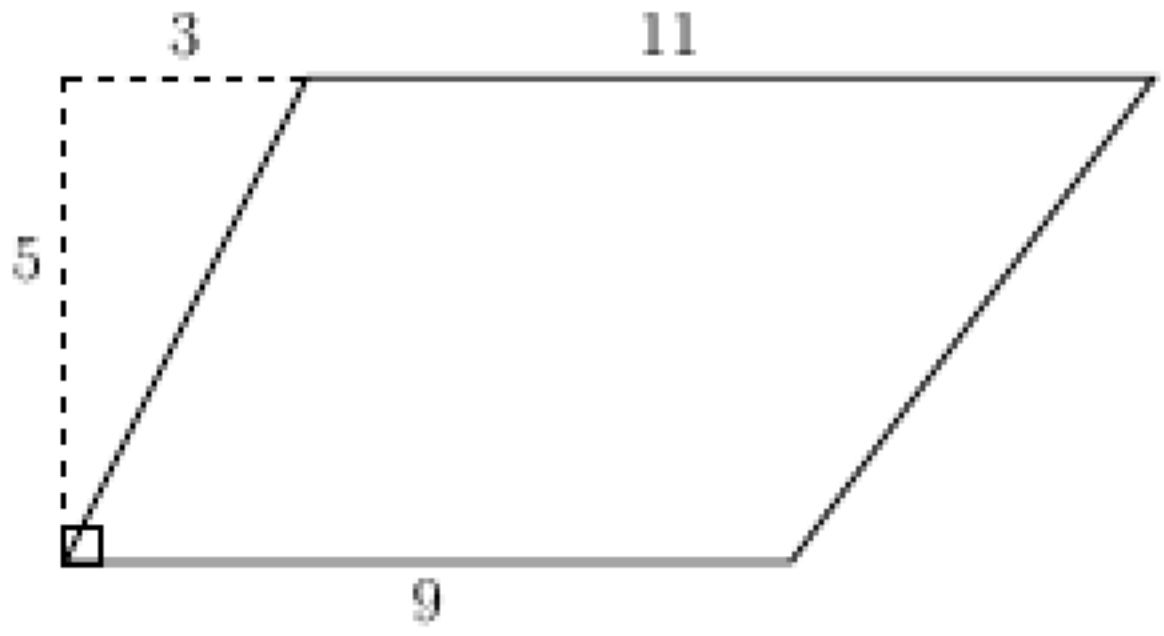
**Solution**: C

The bases are the sides with lengths $9$ and $11$.




The segment $5$ is the height because it is perpendicular to the base $9$.

The segment $3$ is not a height because it is not perpendicular to either base.

$$\text{area} = \frac{1}{2} \cdot (5)(9 + 11) = 50 \text{ square units}$$

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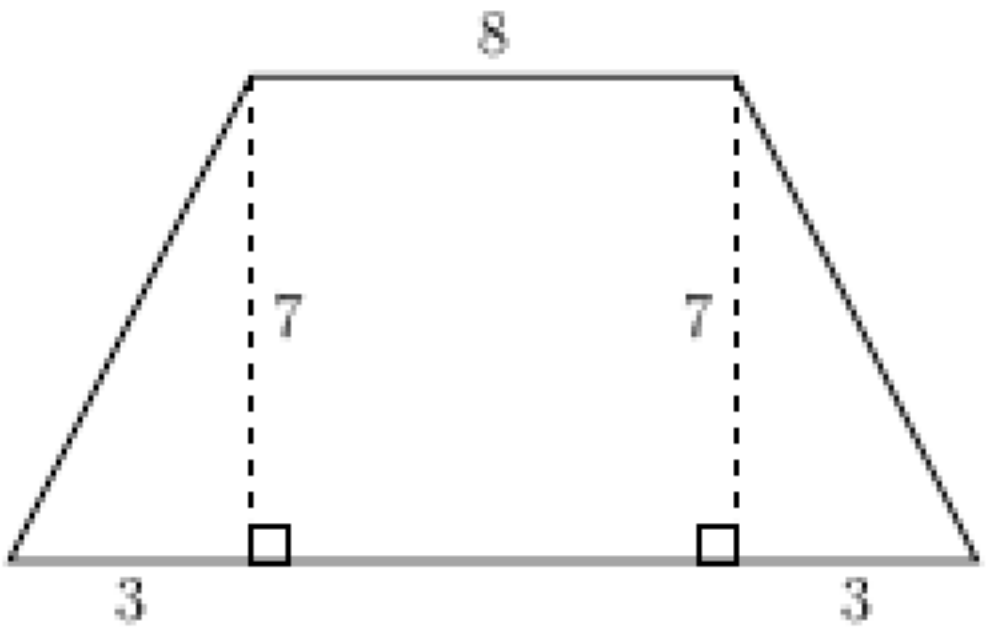


**Answer choices**:

A $49$ square units

B $56$ square units

C $62$ square units

D $77$ square units

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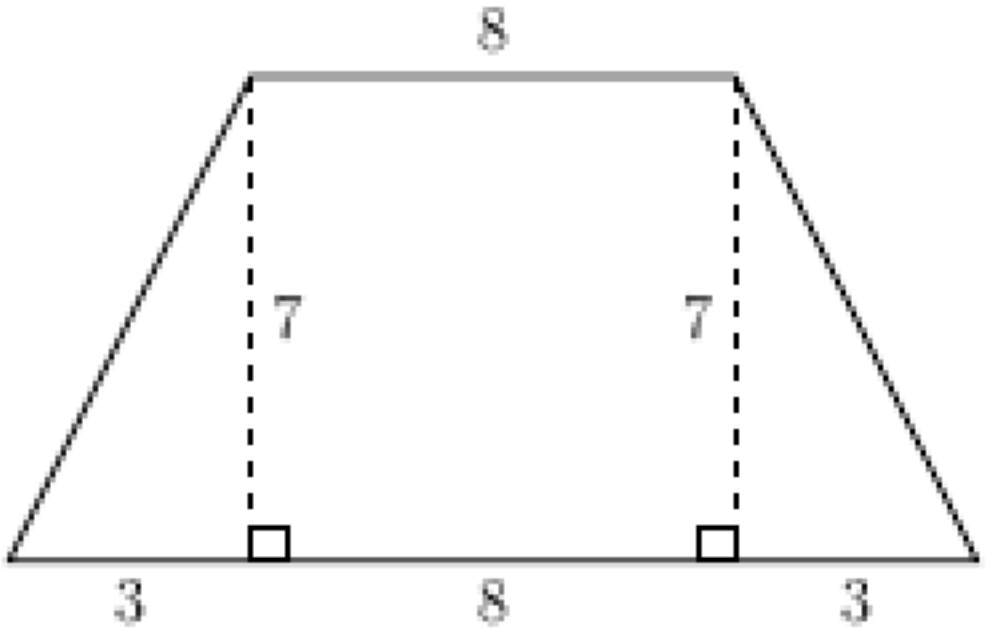
**Solution**: D

The two heights of $7$ form a rectangle.




The base of the rectangle must be $8$.

This gives us the bottom base of the parallelogram as

$$3 + 8 + 3 = 14$$

Which means the area is given by

$$\text{area} = \frac{1}{2} \cdot (7)(8 + 14) = 77 \text{ square units}$$

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